PATIENT SAFETY
FEBRUARY 2004

1: AACN Clin Issues. 2004 Jan-Mar;15(1):63-73.
The impact of bispectral index monitoring on rates of propofol administration.
Olson DM, Cheek DJ, Morgenlander JC.
SUMMARY: The purpose of this article is to examine the efficacy of Bispectral Index (BIS) monitoring as a tool for adjusting the amount of propofol patients receive to maintain a safe and adequate level of sedation in a neurocritical care setting. The BIS monitor is utilized as an adjunct for anesthesia monitoring in the operating room setting and is currently being investigated as a tool for objective sedation monitoring in the critical care setting. 1-6 Sedation is discussed in terms of patient safety and comfort. A secondary data analysis was used to test the hypothesis that BIS monitoring provides a more objective form of sedation assessment that will lead to a decrease in overall rates of propofol administration and fewer incidences of oversedation. Data were abstracted from a quality improvement study of propofol use adjusted to BIS values in patients whose sedation levels were previously adjusted to a goal Ramsay score. The results suggest that there are potential benefits to incorporating BIS into routine sedation assessment in the neurocritical care setting.
PMID: 14767365 [PubMed - in process]

2: Acad Med. 2004 Feb;79(2):186-94.
Communication failures: an insidious contributor to medical mishaps.
Sutcliffe KM, Lewton E, Rosenthal MM.
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PURPOSE: To describe how communication failures contribute to many medical mishaps. METHOD: In late 1999, a sample of 26 residents stratified by medical specialty, year of residency, and gender was randomly selected from a population of 85 residents at a 600-bed U.S. teaching hospital. The study design involved semistructured face-to-face interviews with the residents about their routine work environments and activities, the medical mishaps in which they recently had been involved, and a description of both the individual and organizational contributory factors. The themes reported here emerged from inductive analyses of the data. RESULTS: Residents reported a total of 70 mishap incidents. Aspects of "communication" and "patient management" were the two most commonly cited contributing factors. Residents described themselves as embedded in a complex network of relationships, playing a pivotal role in patient management vis-a-vis other medical staff and health care providers from within the hospital and from the community. Recurring patterns of communication difficulties occur within these relationships and appear to be associated with the occurrence of medical

mishaps. CONCLUSION: The occurrence of everyday medical mishaps in this study is associated with faulty communication; but, poor communication is not simply the result of poor transmission or exchange of information. Communication failures are far more complex and relate to hierarchical differences, concerns with upward influence, conflicting roles and role ambiguity, and interpersonal power and conflict. A clearer understanding of these dynamics highlights possibilities for appropriate interventions in medical education and in health care organizations aimed at improving patient safety.
PMID: 14744724 [PubMed - in process]

3: Anaesthesia. 2004 Feb;59(2):177-9.
Latex-free reservoir bags: exchanging one potential hazard for another.
Blanshard HJ, Milne MR.
Department of Anaesthesia, Frenchay Hospital, Bristol BS16 1LE, UK.
The reservoir bag on the anaesthetic breathing circuit is a safety feature that can protect the patient. It is highly distensible, pressures within the breathing circuit rarely exceeding 3.9 kPa (40 cmH2O) even when the adjustable pressure-limiting valve is inadvertently left closed. In providing a safe latex-free environment in our anaesthetic rooms, the traditional latex rubber reservoir bag is substituted by a latex-free one. To investigate the safety features of several latex-free reservoir bags already in use in our hospital, we assessed the in-circuit pressures obtained at stepped fresh gas flows using a lung simulator. Four out of five of the latex-free bags exceeded pressures of 4.4 kPa (45 cmH2O), raising the possibility that, in trying to avoid an occupational hazard, we might be compromising patient safety. We found that, of the five latex-free systems we tested, only the Intersurgical complete respiratory system provided an adequate safety mechanism for the patient and thus did not potentially compromise patient safety.
PMID: 14725521 [PubMed - in process]

4: Anesth Analg. 2004 Feb;98(2):437-42, table of contents.
Resident training level and quality of anesthesia care in a university hospital.
Posner KL, Freund PR.
Department of Anesthesiology, University of Washington, Seattle, 98195-6540, USA. posner@u.washington.edu.
In this study, we analyzed the relationship between resident training and patient safety in anesthesia. A retrospective quality improvement database review was used to calculate the relative risk of any quality problem and specific types of quality problems (injury, escalation of care, or operational inefficiency) between anesthesia teams with CA1, CA2, and CA3 residents. It was expected that teams with less experienced residents (CA1) would have more frequent quality problems than teams with more experienced residents (CA2 and CA3 teams). Data showed that risk of injury did not differ between CA1, CA2, and CA3 teams. CA2 teams had higher rates of critical incidents and escalation of care than CA1 and CA3 teams and higher rates of operational inefficiency than CA3 teams. The CA2 yr is when residents move into specialty training, requiring more advanced skills and a larger knowledge base. Their higher relative risk for critical incidents, escalation of care, and operational inefficiencies may reflect lack of experience, uncertainty, and less skill mastery compared with CA3 residents. The higher inefficiency and escalation of care rates associated with CA2 teams may translate into larger costs for the institution. IMPLICATIONS: Appropriate supervision of anesthesia residents helps to ensure patient safety. Anesthesia management problems are most common during the CA2 yr
and result in higher costs for the institution.

PMID: 14742384 [PubMed - in process]

5: Ann Intern Med. 2004 Jan 6;140(1):51-3.
Malpractice reform must include steps to prevent medical injury.
Schoenbaum SC, Bovbjerg RR.
The Commonwealth Fund, New York, New York 10021, USA. scs@cmwf.org
In the current malpractice insurance crisis, physicians have focused their advocacy and energy primarily on rapidly increasing liability premiums; problems in access to care; and demands for legal reform, especially caps on damages. An even more important focus, however, is prevention of injury and improvement of patient safety. Physicians largely control patient care and can play a critical role in systematically reducing injury. Reforms should go beyond liability issues; they should also harness and enhance physicians' ability to act. More visible efforts by physicians to reduce harm, better communication with patients and others, and true evidence of improved patient safety should reduce patient anger and litigiousness. Individually and collectively, physicians can and should ensure that "doing no harm" comes first in the malpractice debate.
PMID: 14706972 [PubMed - indexed for MEDLINE]

6: Ann Intern Med. 2004 Jan 6;140(1):33-6.
Patient safety is not enough: targeting quality improvements to optimize the health of the population.
Woolf SH.
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Ensuring patient safety is essential for better health care, but preoccupation with niches of medicine, such as patient safety, can inadvertently compromise outcomes if it distracts from other problems that pose a greater threat to health. The greatest benefit for the population comes from a comprehensive view of population needs and making improvements in proportion with their potential effect on public health; anything less subjects an excess of people to morbidity and death. Patient safety, in context, is a subset of health problems affecting Americans. Safety is a subcategory of medical errors, which also includes mistakes in health promotion and chronic disease management that cost lives but do not affect "safety." These errors are a subset of lapses in quality, which result not only from errors but also from systemic problems, such as lack of access, inequity, and flawed system designs. Lapses in quality are a subset of deficient caring, which encompasses gaps in therapeutics, respect, and compassion that are undetected by normative quality indicators. These larger problems arguably cost hundreds of thousands more lives than do lapses in safety, and the system redesigns to correct them should receive proportionately greater emphasis. Ensuring such rational prioritization requires policy and medical leaders to eschew parochialism and take a global perspective in gauging health problems. The public's well-being requires policymakers to view the system as a whole and consider the potential effect on overall population health when prioritizing care improvements and system redesigns.
Publication Types:
Review
Review, Tutorial
PMID: 14706970 [PubMed - indexed for MEDLINE]
7: Ann Surg. 2004 Jan;239(1):127-31.
Optimal restraint reduces the risk of abdominal injury in children involved in motor vehicle crashes.
Nance ML, Lutz N, Arbogast KB, Cornejo RA, Kallan MJ, Winston FK, Durbin DR.
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19104, USA. nance@email.chop.edu
BACKGROUND: The American Academy of Pediatrics has established guidelines for optimal, age-appropriate child occupant restraint. While optimal restraint has been shown to reduce the risk of injuries overall, its effect on specific types of injuries, in particular abdominal injuries, has not been demonstrated. METHODS: Cross-sectional study of children aged younger than 16 years in crashes of insured vehicles in 15 states, with data collected via insurance claims records and a telephone survey. A probability sample of 10927 crashes involving 17132 restrained children, representing 210926 children in 136734 crashes was collected between December 1, 1998 and May 31, 2002. Restraint use was categorized as optimal or suboptimal based on current American Academy of Pediatrics guidelines. The outcome of interest, abdominal injury, was defined as any reported injury to an intra-abdominal organ of Abbreviated Injury Scale >or=2 severity. RESULTS: Among all restrained children, optimal was noted in 59% (n = 120473) and suboptimal in 41% (n = 83555). An associated abdominal organ injury was noted in 0.05% (n = 62) of the optimal restrained group and 0.17% (n = 140) of the suboptimal group. After adjusting for age and seating position (front vs. rear), optimally restrained children were more than 3 times less likely [odds ratio 3.51 (95% confidence interval, 1.87-6.60, P < 0.001)] as suboptimally restrained children to suffer an abdominal injury. Of note, there were no abdominal injuries reported among optimally restrained 4- to 8-year-olds. CONCLUSIONS: Optimally restrained children are at a significantly lower risk of abdominal injury than children suboptimally restrained for age. This disparity emphasizes the need for aggressive education efforts aimed not only at getting children into restraint systems, but also the importance of optimal, age-appropriate restraint.
PMID: 14685110 [PubMed - indexed for MEDLINE]

8: AORN J. 2004 Jan;79(1):224-6.
Learning from stories--a pathway to patient safety.
Beyea SC, Killen A, Knox GE.
Dartmouth-Hitchcock Medical Center, Lebanon, NH, USA.
PMID: 14763589 [PubMed - in process]

9: Clin Pharmacol Ther. 2004 Jan;75(1):110-22.
Monitoring amiodarone's toxicities: recommendations, evidence, and clinical practice.
Stelfox HT, Ahmed SB, Fiskio J, Bates DW.
OBJECTIVES: We sought to develop an explicit evidence-based model of medication monitoring and to evaluate monitoring practices and adverse drug events in patients taking amiodarone at one institution. METHODS: We searched MEDLINE (1966 through 2000) for English-language publications providing specific monitoring recommendations for amiodarone. A cross-sectional retrospective chart review of 99 outpatients receiving amiodarone therapy between Jan 1, 2000, and Jan 1, 2001, at a large tertiary-care hospital was performed to assess monitoring practices. Adverse drug events were identified by use of structured implicit reviews. The main outcome measure was the proportion of patients receiving the monitoring recommended in the literature and having amiodarone-related adverse drug events. RESULTS: Forty-three articles were identified that provided specific monitoring recommendations, although no studies were found that compared the outcomes of patients managed with different monitoring regimens. Overall, 70% of the recommended monitoring criteria were satisfied, although only 9 patients (9%; 95% confidence interval [95% CI], 3%-15%) received all of the recommended monitoring. Variability in monitoring practices was identified at all stages of the monitoring model. Of the patients,

52 (52%; 95% CI, 42%-62%) received minimum baseline evaluations, 22 (22%; 95%
CI, 14%-31%) underwent ongoing surveillance, 75 (75%; 95% CI, 61%-89%) had appropriate responses to abnormal surveillance results, and 71 (71%; 95% CI, 62%-80%) had timely follow-up visits. Of the patients, 8 (8%; 95% CI, 3%-13%) had 9 amiodarone-related adverse drug events, of which 3 were judged to be preventable. Interrater agreement for monitoring processes (kappa = 0.83) and adverse drug events (kappa = 0.67) was good. CONCLUSIONS: Current standards for
amiodarone toxicity monitoring are based on expert opinion with limited evidence to support most recommendations. Monitoring practices appear to vary significantly, with few patients receiving all of the recommended monitoring. Some amiodarone-related adverse drug events may be preventable and patient safety might be improved with a better understanding of monitoring processes.
PMID: 14749697 [PubMed - indexed for MEDLINE]

10: CMAJ. 2004 Feb 3;170(3):353-4.
Adverse events and patient safety in Canadian health care.
Baker GR, Norton PG.
Department of Health Policy, Management and Evaluation, University of Toronto, Toronto, Ont. (Baker) and the Department of Family Medicine, University of Calgary, Calgary, Alta. (Norton).
PMID: 14757671 [PubMed - in process]

11: Crit Care Med. 2004 Jan;32(1):256-62.
Comment in:
Crit Care Med. 2004 Jan;32(1):305-6.
Guidelines for the inter- and intrahospital transport of critically ill patients.
Warren J, Fromm RE Jr, Orr RA, Rotello LC, Horst HM; American College of Critical Care Medicine.
Northwest Community Hospital, Arlington Heights, IL, USA.
OBJECTIVE: The development of practice guidelines for the conduct of intra- and interhospital transport of the critically ill patient. DATA SOURCE: Expert opinion and a search of Index Medicus from January 1986 through October 2001 provided the basis for these guidelines. A task force of experts in the field of patient transport provided personal experience and expert opinion. STUDY SELECTION AND DATA EXTRACTION: Several prospective and clinical outcome studies
were found. However, much of the published data comes from retrospective reviews and anecdotal reports. Experience and consensus opinion form the basis of much of these guidelines. RESULTS OF DATA SYNTHESIS: Each hospital should have a formalized plan for intra- and interhospital transport that addresses a) pretransport coordination and communication; b) transport personnel; c) transport equipment; d) monitoring during transport; and e) documentation. The transport plan should be developed by a multidisciplinary team and should be evaluated and refined regularly using a standard quality improvement process. CONCLUSION: The transport of critically ill patients carries inherent risks. These guidelines promote measures to ensure safe patient transport. Although both intra- and interhospital transport must comply with regulations, we believe that patient safety is enhanced during transport by establishing an organized, efficient process supported by appropriate equipment and personnel.
Publication Types:
Guideline
Practice Guideline
PMID: 14707589 [PubMed - indexed for MEDLINE]

12: Endoscopy. 2004 Jan;36(1):23-31.
Preparation, premedication, and surveillance.
Bell GD.
School of Computing Sciences, University of East Anglia, Norwich NR4 7TJ, England. gdb@cmp.uea.ac.uk
The main criteria for assessing conscious sedation (perhaps now more correctly termed "moderate sedation/analgesia") continue to be patient satisfaction and comfort, short duration, amnesia, and above all, patient safety. The problems reviewed last year - including the increasing pressure on endoscopy units to perform yet more procedures, reduce costs, and achieve shorter patient turn-around times - certainly have not gone away. Studies reviewed this year suggest that although many endoscopic procedures, such as oesophagogastroduodenoscopy (OGD), colonoscopy, and endoscopic ultrasonography (EUS) can indeed be performed without intravenous sedation, many patients still prefer to be sedated. Further papers on the possible role of ultrathin endoscopes in unsedated OGD are reviewed here. A study in Italy comparing virtual computed-tomographic (CT) colonography and conventional colonoscopy suggests that unsedated colonoscopy is unlikely to meet with wide acceptance. Audits of colonoscopy in both the United States and the United Kingdom suggest that there is still a long way to go before caecal intubation rates of more than 90 % are regularly attained. The evidence suggests that some endoscopists are using larger doses of a midazolam and pethidine combination than are generally recommended (particularly in elderly patients), and sedation-related deaths are still occurring. Impressively large clinical studies, particularly those from Switzerland, on the use of propofol administered by nonanaesthetists are leading to reconsideration of the earlier view that propofol should only be used by anaesthetists. If propofol is to be used more widely and become an agent administered by endoscopists (or nursing staff), then considerable improvements in the standard of airways management will be needed. Several new studies relating to bowel-cleansing agents and the use of a carbohydrate/electrolyte "cholera mixture" to prevent the associated intravascular volume contraction have been published. Warm water is a cheap and effective way of reducing colonic spasm during colonoscopy, and intraluminal peppermint oil is a good antispasmodic in the stomach as well as the colon. Sedation should still be regarded as one part of an overall "endoscopy package". Finally, more attention needs to be given to patients' complaints regarding what are often considered by endoscopists to be "trivial complications" if the patients are to have a positive experience of their examination that will lead to them being prepared to come back a second time.
PMID: 14722852 [PubMed - in process]

13: Health Manag Technol. 2004 Feb;25(2):26-30.
Patient safety hotlist.
[No authors listed]
PMID: 14870593 [PubMed - in process]

14: Health Manag Technol. 2004 Feb;25(2):14-6, 21-2.
Safety first. IT has made huge inroads into improving patient safety. Four healthcare end-users discuss their organizations' latest IT adoptions of patient safety technologies.
Rogoski RR.
rogoski@aol.com
PMID: 14870592 [PubMed - in process]

15: Hosp Health Netw. 2004 Jan;78(1):49-54, 2.
Wired at the bedside.
Runy LA.
lruny@healthforum.com
The January gatefold looks at seven ways the latest in bedside technologies affect nursing. Many hospitals that have implemented bedside technologies have realized significant improvements in patient safety and staff and patient satisfaction.
PMID: 14768452 [PubMed - in process]

16: Hosp Peer Rev. 2004 Jan;29(1):13-6.
Get more out of your FMEAs.
Spath P.
PMID: 14708497 [PubMed - indexed for MEDLINE]

17: Hosp Peer Rev. 2003 Dec;28(12):167-9.
Boost patient satisfaction while enhancing safety.
[No authors listed]
PMID: 14692384 [PubMed - indexed for MEDLINE]

18: Infect Control Hosp Epidemiol. 2004 Jan;25(1):72-9.
Performance improvement in the long-term-care setting: building on the foundation of infection control.
Stevenson KB, Loeb M.
Qualis Health, Boise, Idaho 83712-7756, USA.
Infection control programs were among the first organized efforts to improve the quality of healthcare delivered to patients and are an excellent model for the development of other healthcare performance improvement activities. Whether labeled as infection control, quality improvement, or patient safety, performance improvement initiatives share similar methods and principles. The quality of care in long-term-care facilities (LTCFs) has been scrutinized for years and has received renewed attention with the recent initiation of public reporting of quality measures by Medicare. This article reviews the principles of performance improvement, discusses the importance of employing evidence-based interventions, and emphasizes the value of local performance improvement in LTCFs. Residents of LTCFs remain at high risk for the development of nosocomial infections, and among performance improvement initiatives, infection control is recommended as a high priority for all LTCFs. Fortunately, infection control contains the essential elements for performance improvement, and a successful infection control program can provide the foundation for expanding performance improvement throughout the LTCF. There is still much that needs to be done to determine the best clinical practices for LTCFs, and this should remain a priority for future research. Furthermore, efforts should continue to apply these principles at the local level to ensure that all residents of LTCFs receive the best care possible.
PMID: 14756224 [PubMed - in process]

19: J AHIMA. 2004 Jan;75(1):96.
Making patient safety number one.
Duggan CM.
chrisduggan@rcn.com
PMID: 14748237 [PubMed - in process]

20: J Healthc Manag. 2004 Jan-Feb;49(1):47-58; discussion 58-9.
The role of leadership in instilling a culture of safety: lessons from the

literature.
Ruchlin HS, Dubbs NL, Callahan MA.
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The publication of To Err Is Human has highlighted concern for patient safety. Attention to date has focused primarily on micro issues such as minimizing medication errors and adverse drug reactions, improving select aspects of care, and reducing diagnostic and treatment errors. However, attention is also required to a macro issue--an organization's culture and the level of leadership required to create a culture. This article discusses the concepts of culture and leadership and summarizes two paradigms that are useful in understanding the precursors of medical errors and developing interventions to prevent them: normal accident theory and high-reliability organization theory. It also delineates approaches to instilling a safety culture. Normal accident theory asserts that errors result from system failures. An important element of this perspective is the need for a system that collects, analyzes, and disseminates information from incidents and near misses as well as regular proactive checks on the system's vital signs. Four subcultures are necessary to support such an environment: a reporting culture, a just culture, a flexible culture, and a learning culture. High-reliability organization theory posits that accidents occur because individuals who operate and manage complex systems are themselves not sufficiently complex to sense and anticipate the problems generated by the system. Lessons learned from high-reliability organizations indicate that a safety culture is supported by migrated distributed decision making, management by exception or negotiation, and fostering a sense of the "big picture." Lessons from other industries are also shared in this article.
PMID: 14768428 [PubMed - in process]

21: J Manag Care Pharm. 2004 Jan-Feb;10(1):60-78.
Framework for pharmacy services quality improvement--a bridge to cross the quality chasm. Part I. The opportunity and the tool.
Curtiss FR, Fry RN, Avey SG.
fcurtiss@amcp.org
OBJECTIVE: To review the literature on the subject of quality improvement principles and methods applied to pharmacy services and to describe a framework for current and future efforts in pharmacy services quality improvement and effective drug therapy management. BACKGROUND: The Academy of Managed Care Pharmacy produced the Catalog of Pharmacy Quality Indicators in 1997, followed by the Summary of National Pharmacy Quality Measures in February 1999. In April 2002, AMCP introduced Pharmacy's Framework for Drug Therapy Management in the 21st Century. The Framework documents include a self-assessment tool that details more than 250 specific "components" that describe tasks, behaviors, skills, functions, duties, and responsibilities that contribute to meeting customer expectations for effective drug therapy management. FINDINGS: There are many opportunities for quality improvement in clinical, service, and cost outcomes related to drug therapy management. These may include patient safety; incidence of medical errors; adverse drug events; patient adherence to therapy; attainment of target goals of blood pressure, glucose, and lipid levels; risk reduction for adverse cardiac events and osteoporotic-related fractures; patient satisfaction; risk of hospitalization or mortality; and cost of care. Health care practitioners can measure improvements in health care quality in several ways including (a) a better patient outcome at the same cost, (b) the same patient outcome at lower cost, (c) a better patient outcome at lower cost, or (d) a significantly better patient outcome at moderately higher cost. Measurement makes effective management possible. A framework of component

factors (e.g., tasks) is necessary to facilitate changes in the key processes and critical factors that will help individual practitioners and health care systems meet customer expectations in regard to drug therapy, thus improving these outcomes. CONCLUSIONS: Quality improvement in health care services in the United States will be made in incremental changes that rely on a structure-process-outcome model. The structure is provided by evidence created from controlled randomized trials and other studies of care and system outcomes that are based on the scientific method. The process portion is created by the application of evidence in the form of clinical practice guidelines, clinical practice models, and self-assessment tools such as Pharmacy's Framework for Drug Therapy Management. Incremental changes in structure and process will result in the desirable outcome of meeting customer needs for more effective drug therapy and disease management.
PMID: 14720106 [PubMed - in process]

22: J Med Ethics. 2004 Feb;30(1):30-4.
Institutional ethics review of clinical study agreements.
DuVal G.
Clinical Study Agreements (CSAs) can have profound effects both on the protection of human subjects and on the independence of investigators to conduct research with scientific integrity. Sponsors, institutions, and even investigators may fail to give adequate attention to these issues in the negotiation of CSAs. Despite the key role of CSAs in structuring ethically important aspects of research, they remain largely unregulated and unreviewed for adherence to ethical norms. Academic institutions routinely enter into research contracts that fail to meet adequate ethical standards. This is a failing that can have serious consequences. Accordingly, it is necessary that some independent body have the authority both to review research contracts for compliance with norms of subject protection and ethical integrity, and to reject studies that fail to meet ethical standards. Such review should take place prior to the start of research, not later. Because of its expertise and authority, the institutional ethics review board (IRB or REB) is the appropriate body to undertake such review. Much recent commentary has focused on contractual restrictions on the investigator's freedom to publish research findings. The Olivieri experience, and that of other investigators, has brought freedom of publication issues into sharp focus. Clinical study agreements also raise a number of other ethical issues relating to human subjects and research integrity, however, including disclosures relating to patient safety, data analysis and reporting, budget, confidentiality, and premature termination of the study. This paper describes the ethical issues at stake in structuring such agreements and suggests ethical standards to guide institutional ethics review.
PMID: 14872068 [PubMed - in process]

trials, two different strategies to mitigate this problem are identified and assessed: a regulatory approach, which focuses on managing risks associated with industry funding of university research, and a more radical approach, the sequestration thesis, which counsels the outright elimination of corporate sponsorship. The reformist approach is criticised and the radical approach defended.
PMID: 14872066 [PubMed - in process]

23: J Nurs Adm. 2004 Jan;34(1):41-5.
Nurse staffing models, nursing hours, and patient safety outcomes.
McGillis Hall L, Doran D, Pink GH.
Nursing Effectiveness, Utilization, and Outcomes Research Unit, Faculty of

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BACKGROUND DATA: Limited research has been conducted examining the effect of nurse staffing models on costs and patient outcomes. OBJECTIVE: The objective of this study was to evaluate the effect of different nurse staffing models on costs and the patient outcomes of patient falls, medication errors, wound infections, and urinary tract infections. METHODS: A descriptive correlational study was conducted in all of the 19 teaching hospitals in Ontario, Canada. The sample comprised hospitals and adult medical, surgical, and obstetric inpatients within those hospitals. RESULTS: The lower the proportion of professional nursing staff employed on a unit, the higher the number of medication errors and wound infections. The less experienced the nurse, the higher the number of wound infections. Nurse staffing models that included a lower proportion of professional nursing staff in the mix used more nursing hours in this study. CONCLUSIONS: The results of this study suggest that a higher proportion of professional nurses in the staff mix (RNs/RPNs) on medical and surgical units in Ontario teaching hospitals are associated with lower rates of medication errors and wound infections. Higher patient complexity was associated with greater patient use of nursing care resources.
PMID: 14737034 [PubMed - in process]

24: JAMA. 2004 Jan 21;291(3):325-34.
Comment in:
JAMA. 2004 Jan 21;291(3):367-70.
Surveillance of medical device-related hazards and adverse events in hospitalized patients.
Saore MH, Evans RS, Lassen A, Gould P, Lloyd J, Gardner RM, Abouzelof R, Taylor C, Woodbury DA, Willy M, Bright RA.
University of Utah School of Medicine, Salt Lake City 84132, USA.
CONTEXT: Although adverse drug events have been extensively evaluated by computer-based surveillance, medical device errors have no comparable surveillance techniques. OBJECTIVES: To determine whether computer-based surveillance can reliably identify medical device-related hazards (no known harm to patient) and adverse medical device events (AMDEs; patient experienced harm) and to compare alternative methods of detection of device-related problems. DESIGN, SETTING, AND PARTICIPANTS: This descriptive study was conducted from January through September 2000 at a 520-bed tertiary teaching institution in the United States with experience in using computer tools to detect and prevent adverse drug events. All 20 441 regular and short-stay patients (excluding obstetric and newborn patients) were included. MAIN OUTCOME MEASURES: Medical device events as detected by computer-based flags, telemetry problem checklists, International Classification of Diseases, Ninth Revision (ICD-9) discharge code (which could include AMDEs present at admission), clinical engineering work logs, and patient survey results were compared with each other and with routine voluntary incident reports to determine frequencies, proportions, positive predictive values, and incidence rates by each technique. RESULTS: Of the 7059 flags triggered, 552 (7.8%) indicate a device-related hazard or AMDE. The estimated 9-month incidence rates (number per 1000 admissions [95% confidence intervals]) for AMDEs were 1.6 (0.9-2.5) for incident reports, 27.7 (24.9-30.7) for computer flags, and 64.6 (60.4-69.1) for ICD-9 discharge codes. Few of these events were detected by more than 1 surveillance method, giving an overall incidence of AMDE detected by at least 1 of these methods of 83.7 per 1000 (95% confidence interval, 78.8-88.6) admissions. The positive predictive value of computer flags for detecting device-related hazards and AMDEs ranged from 0% to 38%. CONCLUSIONS: More intensive surveillance methods yielded higher rates of

medical device problems than found with traditional voluntary reporting, with little overlap between methods. Several detection methods had low efficiency in detecting AMDEs. The high rate of AMDEs suggests that AMDEs are an important patient safety issue, but additional research is necessary to identify optimal AMDE detection strategies.
PMID: 14734595 [PubMed - indexed for MEDLINE]

25: Jt Comm J Qual Saf. 2004 Jan;30(1):47-55.
The roles of government in improving health care quality and safety.
Tang N, Eisenberg JM, Meyer GS.
Harvard University, Boston, USA.
BACKGROUND: Discussions surrounding the role of government have been and continue to be a favorite American pastime. A framework is provided for understanding the 10 roles that government plays in improving health care quality and safety in the United States. Examples of proposed federal actions to reduce medical errors and enhance patient safety are provided to illustrate the 10 roles: (1) purchase health care, (2) provide health care, (3) ensure access to quality care for vulnerable populations, (4) regulate health care markets, (5) support acquisition of new knowledge, (6) develop and evaluate health technologies and practices, (7) monitor health care quality, (8) inform health care decision makers, (9) develop the health care workforce, and (10) convene stakeholders from across the health care system. CONCLUSION: Government's responsibility to protect and advance the interests of society includes the delivery of high-quality health care. Because the market alone cannot ensure all Americans access to quality health care, the government must preserve the interests of its citizens by supplementing the market where there are gaps and regulating the market where there is inefficiency or unfairness. The ultimate goal of achieving high quality of care will require strong partnerships among federal, state, and local governments and the private sector. Translating general principles regarding the appropriate role of government into specific actions within a rapidly changing, decentralized delivery system will require the combined efforts of the public and private sectors.
PMID: 14738036 [PubMed - in process]

26: Magn Reson Med. 2004 Feb;51(2):291-8.
Detection of simulated pulmonary embolism in a porcine model using hyperpolarized 3He MRI.
Jalali A, Ishii M, Edvinsson JM, Guan L, Itkin M, Lipson DA, Baumgardner JE, Rizi RR.
Department of Radiology, University of Pennsylvania Medical Center, Philadelphia, Pennsylvania.
Several radiological imaging modalities are available to assist with the clinical diagnosis of pulmonary embolism (PE). The most frequently used techniques-nuclear medicine ventilation-perfusion (VP) scan, computed tomography (CT), magnetic resonance angiography (MRA), and pulmonary angiography (PA)-all have literature-supported, substantial limitations with respect to timeliness and patient safety. Hyperpolarized (3)He magnetic resonance gas distribution imaging (HP (3)He MRI) recently has shown potential as a safer and faster alternative. In this study, we performed HP (3)He MRI on a porcine model (N = 6) of simulated PE using selective occlusion balloon catheterization (N = 4) and nonselective aged autologous clot injection (N = 1). The technique was also performed on a normal pig and again after the animal was killed. Temporal depletion of regional HP (3)He MRI signal intensity provided for a qualitative assessment of simulated PE (N = 4), and regional P(A)O(2) (alveolar partial

pressure of oxygen) was calculated in affected airspaces for a quantitative assessment of simulated PE (N = 1). The preliminary results suggest that HP (3)He MRI shows promise as a means of assessing regional pulmonary perfusion abnormalities in the porcine models of simulated PE that were used in this study. Magn Reson Med 51:291-298, 2004. Copyright 2004 Wiley-Liss, Inc.
PMID: 14755654 [PubMed - in process]

27: Med Care. 2004 Feb;42(2 Suppl):II49-56.
Promoting patient safety and enabling evidence-based practice through informatics.
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OBJECTIVES: The purposes of this article are to highlight the role of informatics in promoting patient safety and enabling evidence-based practice (EBP), 2 significant aspects for assuring healthcare quality; to delineate some challenges for the future; and to provide key recommendations for education, practice, policy, and research. METHODS: First, we describe the components of an informatics infrastructure for patient safety and evidence-based practice. Second, we address the role of informatics in 4 areas: 1) information access; 2) automated surveillance for real-time error detection and prevention; 3) communication among members of the healthcare team; and 4) standardization of practice patterns. Last, we delineate some future challenges for nursing and for informatics and provide key recommendations for education, practice, policy, and research. RESULTS: The components of an informatics infrastructure are available and applications that bring together these components to promote patient safety and enable EBP have demonstrated positive or promising results. CONCLUSIONS: Challenges must be addressed so that an informatics infrastructure and related applications that promote patient safety and enable EBP can be realized.
PMID: 14734942 [PubMed - in process]

28: Ophthalmology. 2004 Jan;111(1):28-33.
Linear-long incisions with a small optical zone for the correction of astigmatism in older patients.
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PURPOSE: To evaluate the efficacy of astigmatic keratotomy (AK) by paired linear (transverse)-long incisions within a small optical zone in older patients with 3.00 diopters (D) or more of astigmatism who are intolerant of contact lenses, spectacles, or both. DESIGN: Prospective, noncomparative case series. PARTICIPANTS: Twenty-one eyes (20 patients; age range, 58-87 years) treated at clinics of the Taipei Veterans General Hospital were included in this study. METHODS: Paired linear incisions (90 degrees in length) with a central optical zone (OZ) of 4.5 mm were made to correct high astigmatism in older patients. The incisions were 80% of the corneal thickness and parallel to the axis of the steepest cylinder. MAIN OUTCOME MEASURES: Refraction, keratometry, corneal topography, and visual acuity with and without correction were measured as the outcome indicators. RESULTS: The mean course of the stabilization of corneal curvature was 1.8 months. Significant improvement from a preoperative corneal astigmatism of 4.52+/-1.39 D to a postoperative value of 1.82+/-0.88 D ($P<0.0001$) was shown. Marked axis deviations of more than 30 degrees were observed in 5 cases and corneal perforation was observed in 1 case. When the corneal curvature stabilized, uncorrected visual acuity was improved by 2 lines or more in 15 eyes (71.4%). Spherical equivalents and best-corrected visual

acuity did not change significantly. Postoperative glare was absent in all patients. CONCLUSIONS: We conclude that AK by linear-long incisions extending from a small OZ is effective and safe for correcting astigmatism.
PMID: 14711710 [PubMed - indexed for MEDLINE]

29: Proc AMIA Symp. 2003;:867.
Balance model and patient safety.
Hsieh Y.
Improving patient safety has been largely focused in recent years. Medical-related errors have been pointed as the leading cause of death and injury in the United States. One of the causes of medical error is impaired information transfer and communication. The purpose of this study is to use balance theory to better understand how information is transferred between patients and health care providers and the interactions among balance theory elements at the ambulatory surgery settings. Results can be used to improve information transfer and communication process.
PMID: 14728372 [PubMed - in process]

30: Proc AMIA Symp. 2003;:955.
Feasibility of a Palmtop-based Interactive Education to Promote Patient Safety.
Nyun MT, Aronovitz JR, Khare R, Finkelstein J.
Institute of Medicine defines "patient safety" as a set of measures taken by healthcare professionals to prevent adverse outcomes from medical errors. Kohn1 estimated that medical errors are likely to result in a death of 44,000 to 98,000 people in U.S. hospitals each year, making it almost the fifth leading cause of death. The costs of medical errors, made by healthcare professionals, amount to $29 billions annually. Recent studies showed that current system of medical training and continuous education has limited capability in promoting and sustaining awareness of patient safety and medical error issues. Use of Personal Digital Assistants (PDA) has been increasingly widespread among clinical students and residents. Despite significant improvement in PDA functionality, current literature does not provide systematic assessment of potential use of hand-held computing for interactive clinician education. To address these issues, we assessed the feasibility of a PDA-based interactive multimedia tool aimed to provide self-paced patient safety education for clinicians.
PMID: 14728460 [PubMed - in process]

31: Qual Saf Health Care. 2004 Feb;13(1):21-5.
Investigation of systems to prevent diversion of opiate drugs in general practice in the UK.
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BACKGROUND: Statutory regulations govern the procedures that must be followed by
general practitioners (GPs) in the UK to minimise the risk of diversion of prescribed opiate drugs for illicit use. However, evidence presented at the trial of Harold Shipman, a GP convicted of murdering patients with diamorphine, suggests that the regulations and monitoring of GPs' prescribing are failing.
Aim: To assess the policies followed by general practices in Leicestershire and Rutland with regard to the controlled drugs regulations. METHODS: A semi-structured interview was administered to a purposeful sample of lead GPs to explore how their practices applied the regulations. The controlled drugs

registers and drug storage facilities in these practices were inspected. A questionnaire was sent to all the remaining practices to seek information about their application of the regulations, any concerns they had about the regulations, and any suggestions for improving them. RESULTS: Of the 142 general practices in Leicestershire, the lead GP in 14 took part in the interviews. Respondents expressed dissatisfaction with current policies including the design of controlled drug registers, and generally supported the reintroduction of an inspection scheme. Ninety (70.9%) of the 127 practices to whom the questionnaire was sent responded and, of these, 31 (34.4%) no longer held a supply of controlled drugs. Those that did hold controlled drugs indicated concern about the regulations, confusion about some aspects including the return and disposal of unused drugs, and a desire for advice and support in the implementation of the regulations. Forty two of the 59 respondents who held a supply of controlled drugs (71.2%) would welcome regular inspection. CONCLUSION: GPs are confused about the controlled drugs regulations and have little support in implementing them. The suspension of inspection schemes has reduced the amount of advice and support available to them and, in consequence, the regulations are interpreted differently in different practices. These findings are cause for concern about the risk of diversion of controlled drugs, and illustrate how patient safety systems can decay when they are not maintained.
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32: Qual Saf Health Care. 2004 Feb;13(1):13-20.
Defining and classifying medical error: lessons for patient safety reporting systems.
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BACKGROUND: It is important for healthcare providers to report safety related events, but little attention has been paid to how the definition and classification of events affects a hospital's ability to learn from its experience. OBJECTIVES: To examine how the definition and classification of safety related events influences key organizational routines for gathering information, allocating incentives, and analyzing event reporting data. METHODS: In semi-structured interviews, professional staff and administrators in a tertiary care teaching hospital and its pharmacy were asked to describe the existing programs designed to monitor medication safety, including the reporting systems. With a focus primarily on the pharmacy staff, interviews were audio recorded, transcribed, and analyzed using qualitative research methods. RESULTS: Eighty six interviews were conducted, including 36 in the hospital pharmacy. Examples are presented which show that: (1) the definition of an event could lead to under-reporting; (2) the classification of a medication error into alternative categories can influence the perceived incentives and disincentives for incident reporting; (3) event classification can enhance or impede organizational routines for data analysis and learning; and (4) routines that promote organizational learning within the pharmacy can reduce the flow of medication error data to the hospital. DISCUSSION: These findings from one hospital raise important practical and research questions about how reporting systems are influenced by the definition and classification of safety related events. By understanding more clearly how hospitals define and classify their experience, we may improve our capacity to learn and ultimately improve patient safety.

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33: Qual Saf Health Care. 2004 Feb;13(1):56-61.
Organisational trust: the keystone to patient safety.
Firth-Cozens J.
Trust is an essential part of health care-not only between clinicians and patients but also between staff and management. Research shows us that trust has a beneficial impact on many aspects of working life, including job satisfaction and organisational effectiveness, and both these factors have been shown to affect the quality of patient care. In addition, trust will now be the keystone for any system developed for services to learn from untoward incidents, such as the Reporting and Learning System of the National Patient Safety Agency in the UK. This type of trust is complex and is explored in terms of what staff need from management and the potential conflicts that might be involved in developing trust in a healthcare organisation. This paper looks at the societal and emotional context of health care today and at research from other organisations which shows the factors that must be in place to establish trust. It reviews the attributes of leaders who are seen as trustworthy, and looks at how all this can be used to increase the reporting of and learning from error.
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34: Qual Saf Health Care. 2004 Feb;13(1):71-5.
Quest for quality care and patient safety: the case of Singapore.
Lim MK.
Quality of care in Singapore has seen a paradigm shift from a traditional focus on structural approaches to a broader multidimensional concept which includes the monitoring of clinical indicators and medical errors. Strong political commitment and institutional capacities have been important factors for making the transition. What is still lacking, however, is a culture of rigorous programme evaluation, public involvement, and patient empowerment. Despite these imperfections, Singapore has made considerable strides and its experience may hold lessons for other small developing countries in the common quest for quality care and patient safety.
PMID: 14757804 [PubMed - in process]

35: Rheumatology (Oxford). 2004 Feb;43 Suppl 1:I4-I8.
Osteoarthritis--the impact of a serious disease.
Breedveld FC.
Osteoarthritis (OA) is common in the elderly, but also affects younger people. The disease symptoms are debilitating and, as well as causing physical impairment, can affect the psychosocial wellbeing of the patient. Furthermore, the impact of this disease is substantially increased by the common occurrence of comorbid conditions, such as hypertension and renal impairment. Non-steroidal anti-inflammatory drugs are commonly used to treat the symptoms of OA, but their related gastrointestinal side-effects increase the impact of this disease. Gastrointestinal tolerability should therefore be considered in the design of new therapies that reduce the symptoms and activity of OA. Furthermore, because this disease is associated with comorbid conditions, patient safety must also be considered when designing new therapies.
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